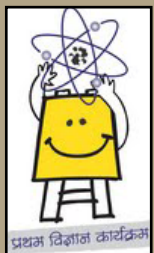


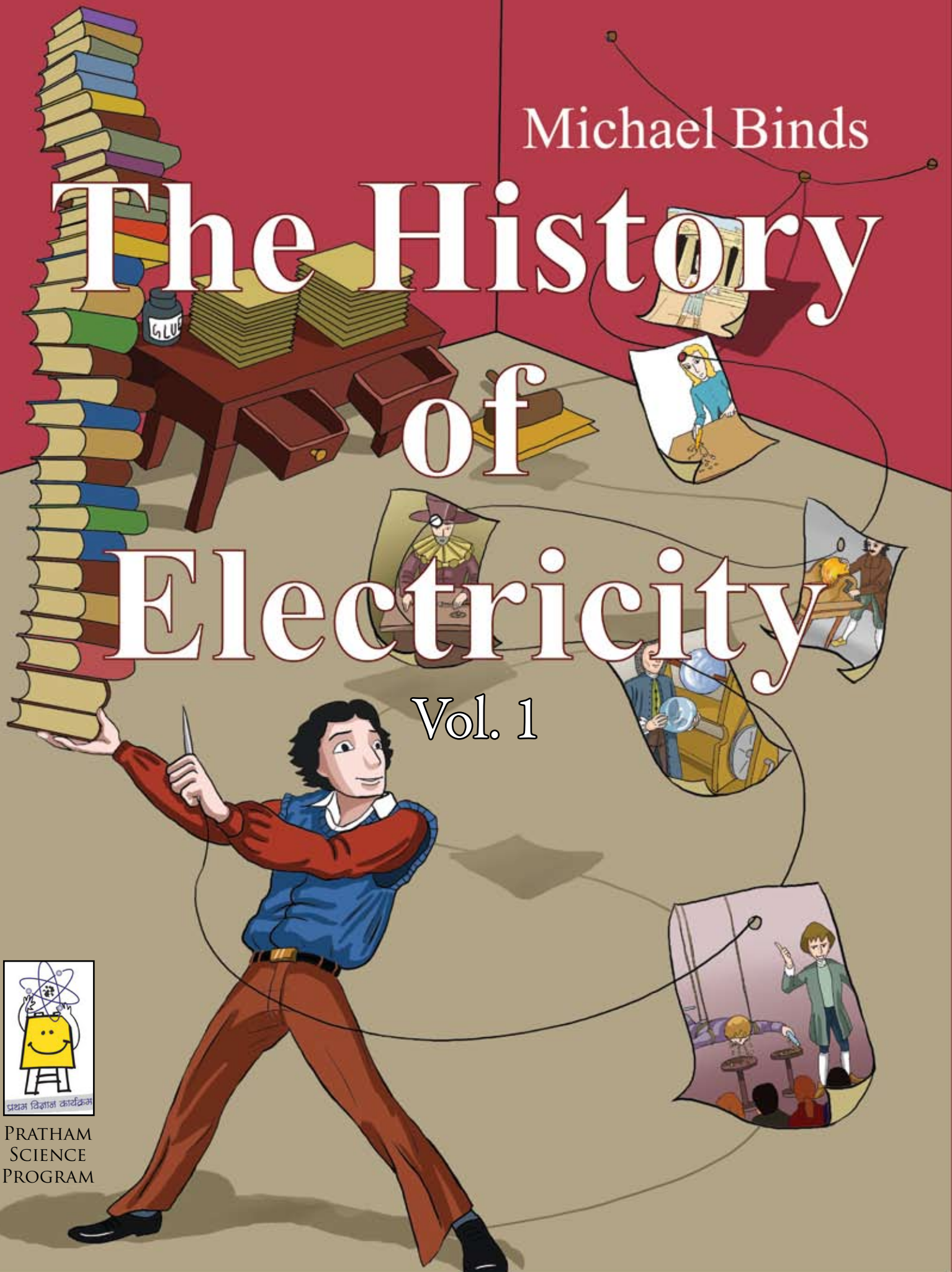
Michael Binds

The History of Electricity

Vol. 1



PRATHAM
SCIENCE
PROGRAM



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THE STORY PRESENTED IN THIS BOOK IS CONSTRUCTED WITH REFERENCES FROM:

JOSEPH PRIESTLEY'S "HISTORY AND CURRENT STATE OF ELECTRICITY" OHIO, 1766. ORIGINALLY PRINTED IN 1755.

HERBERT W. MEYER'S "A HISTORY OF ELECTRICITY AND MAGNETISM" CONNECTICUT, 1972.

JOSEPH F. KEITHLEY'S "THE STORY OF ELECTRICAL AND MAGNETIC MEASUREMENTS: FROM 500 BC TO 1940'S." NEW YORK, 1999.

WITH ADDITIONAL HELP FROM WIKIPEDIA, THE INTERNET ENCYCLOPEDIA.

"THIS BOOK ONLY COVERS NAMES OF SOME SELECTED PHILOSOPHERS AND SCIENTISTS WHO HAVE HELPED IN THE ADVANCEMENT OF THIS FIELD. IN ACTUALITY THE NUMBER OF CONTRIBUTORS, KNOWN AND UNKNOWN MAY BE VAST. BUT MORE IMPORTANT THAN KNOWING THE EXACT PEOPLE INVOLVED IS TO KNOW THE CONCEPTS WHICH FORMED THE BUILDING BLOCKS OF OUR PRESENT UNDERSTANDING OF THIS MAGNIFICENT PHENOMENON ON WHOSE FOUNDATION THE MODERN WORLD STANDS."

RESEARCH, STORY, ARTWORK: SACHIN DATT

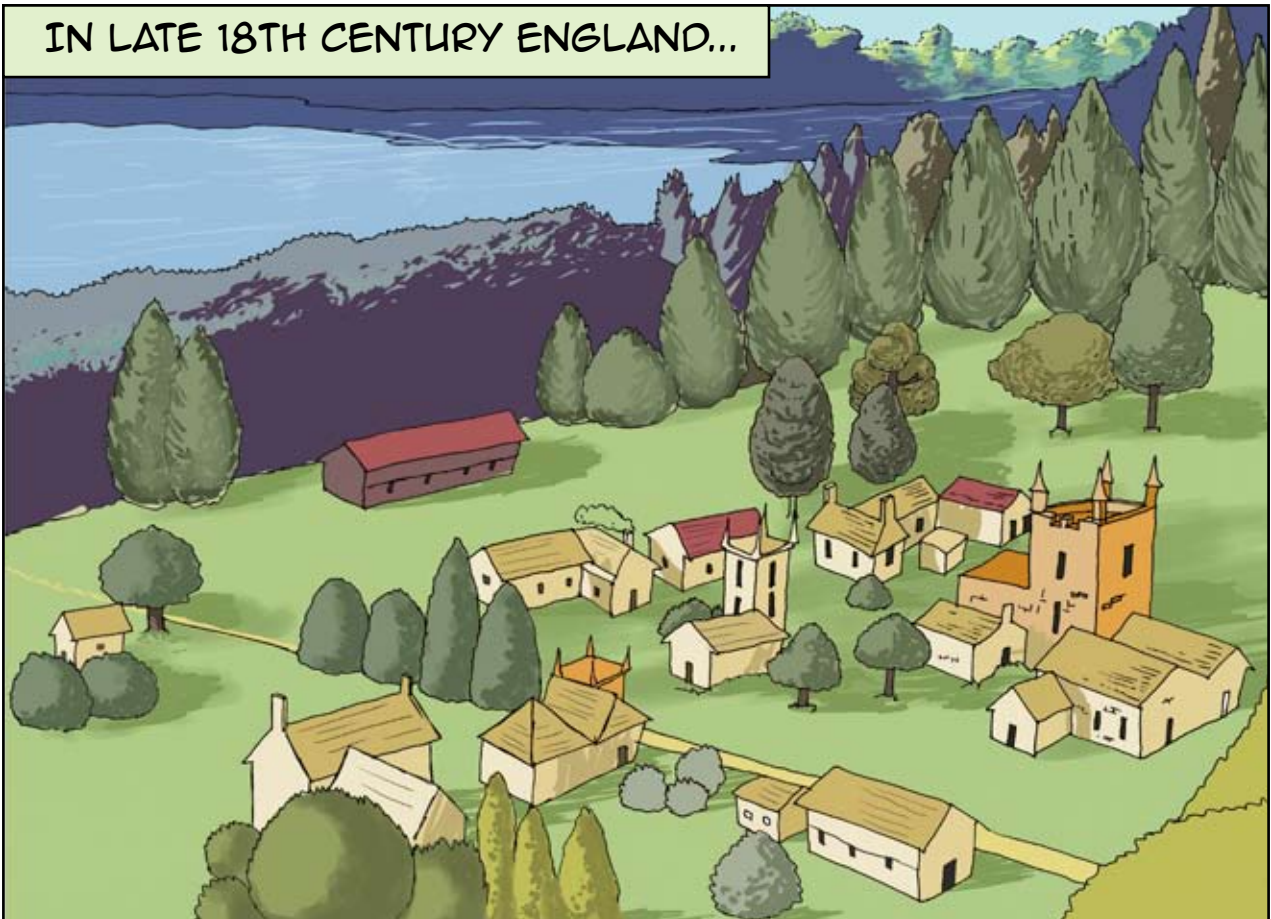
EDITING: NEEL PATHAK, JAYASHREE MANE, ASHUTOSH UPADHYAY

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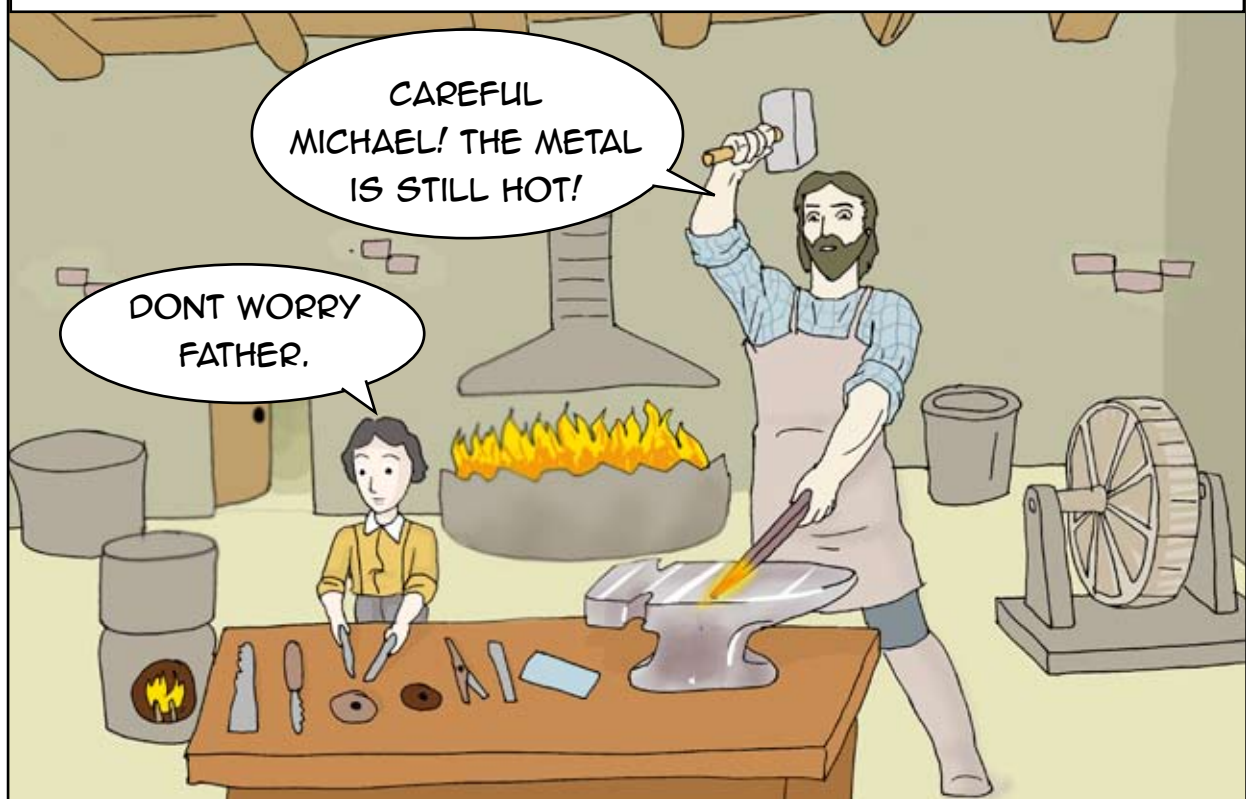
MENTORS: DR. MADHAV CHAVAN, JAYASHREE MANE

SPECIAL THANKS TO NINAD, ASHUTOSH, SACHIN THUTE, JAGDIP, MAHESH, VRUSHALI, KANCHAN, MANASI, SONAL, SNEHAL AND EVERYONE IN PRATHAM SCIENCE PROGRAM

IN LATE 18TH CENTURY ENGLAND...



LIVED A YOUNG BOY NAMED MICHAEL. HE WAS THE SON OF A POOR BLACKSMITH JAMES.



WHEN MICHAEL WAS ONLY 13 YEARS OLD, HIS FATHER FELL ILL.



AND SO MICHAEL BECAME A BOOKBINDER AT AGE OF 14...





THESE BOOKS
ARE SO INTERESTING.
LET ME READ A FEW
PAGES

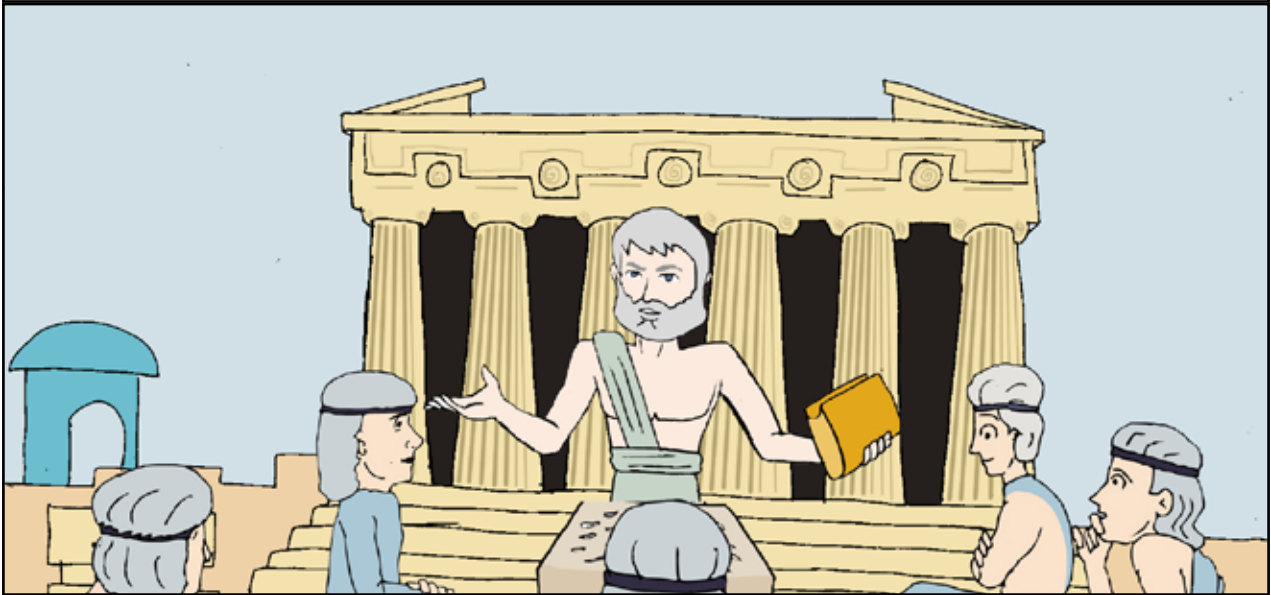


LETS SEE WHAT
THIS BOOK IS ABOUT.

HMMM...THALES OF
MILATUS.

AND SO BEGAN
MICHAEL'S JOURNEY
BACK IN TIME...
LONG LONG AGO...

A VERY LONG TIME AGO IN 600 B.C. IN GREECE, LIVED A TEACHER, TRADER AND PHILOSOPHER. HE WAS POPULARLY KNOWN AS THALES OF MILATUS,

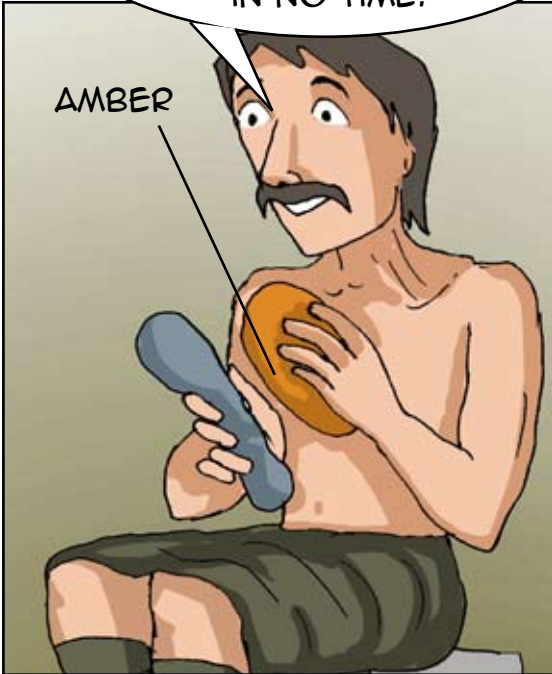


THALES ONCE WENT TO A GOLD SMITH TO GET SOME JEMSTONES POLISHED FOR HIS WIFE.



AHA...THESE JEWELS
ARE MADE OF AMBER
STONE. GREAT CHOICE SIR.
I WILL POLISH THEM
IN NO TIME.

AMBER



ONE STONE DONE.
NOW FOR THE
SECOND ONE



AS THE GOLD SMITH KEPT
ASIDE THE POLISHED STONE,
THALES OBSERVED SOMETHING
STRANGE.



HEY, DID YOU SEE THAT?
HOW AMBER IS ATTRACTING
STRAWS AND GRASS.



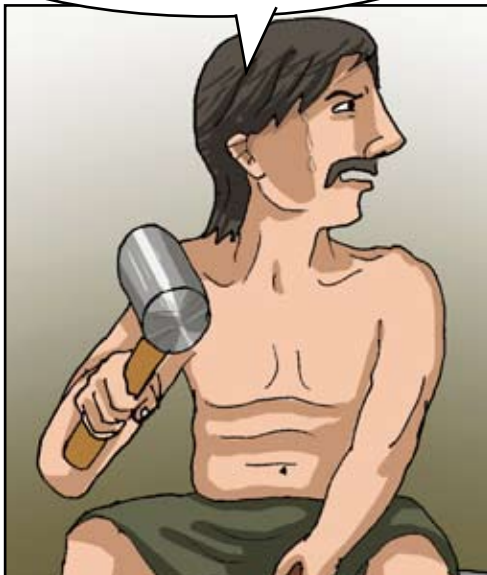
YES I CAN SEE
THAT. SO?



ISN'T IT
STRANGE?



WHATS SO STRANGE
ABOUT IT? IT ALWAYS
HAPPENS.



HOW CAN A DEAD
OBJECT PULL OTHER
OBJECTS?



THIS STRANGE OBSERVATION COMPELLED THALES TO
OBSERVE THIS PHENOMENON MORE CLOSELY. HE GOT A FRESH
PIECE OF AMBER AND STARTED EXPERIMENTING WITH IT.

FIRST LET ME POLISH THIS
AMBER STONE WITH THIS
CLOTH.



WHAT IS THIS??!!



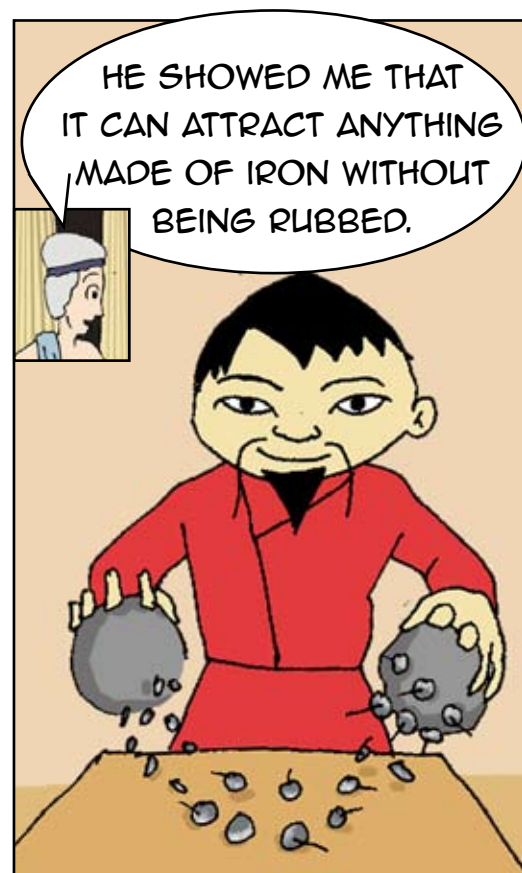
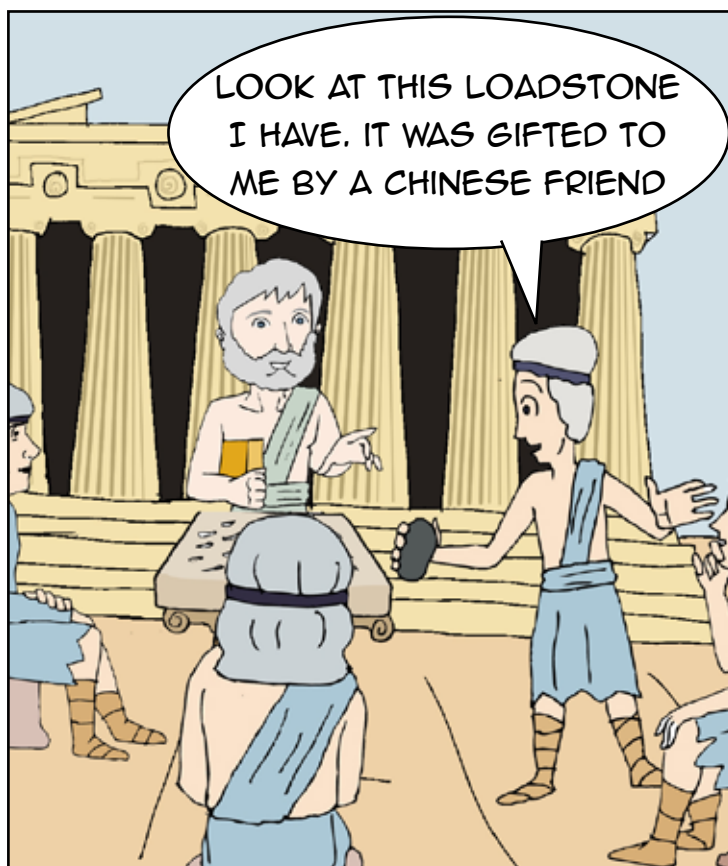
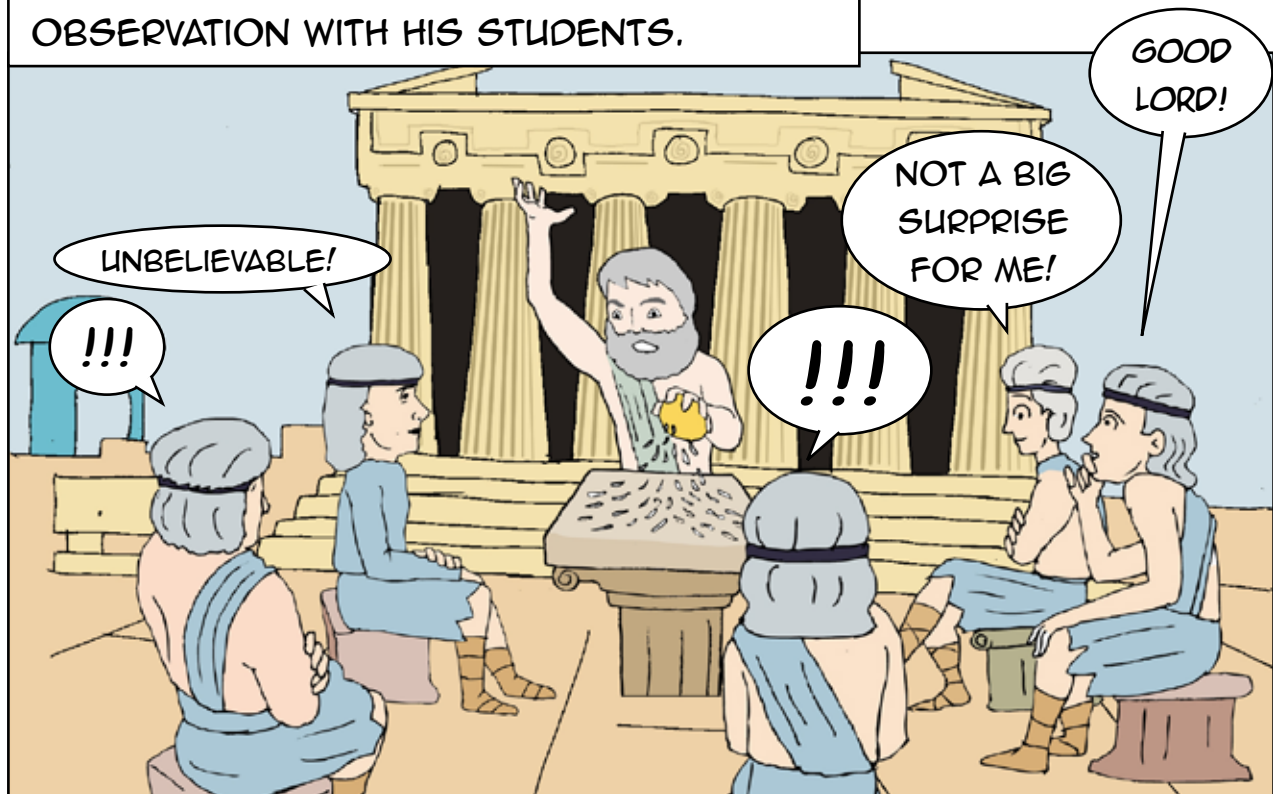
IT IS ATTRACTING GRASS
AND STRAW AS I HAD SEEN
BEFORE. WHAT WILL HAPPEN
IF I JUST RUB IT WITH HAND?



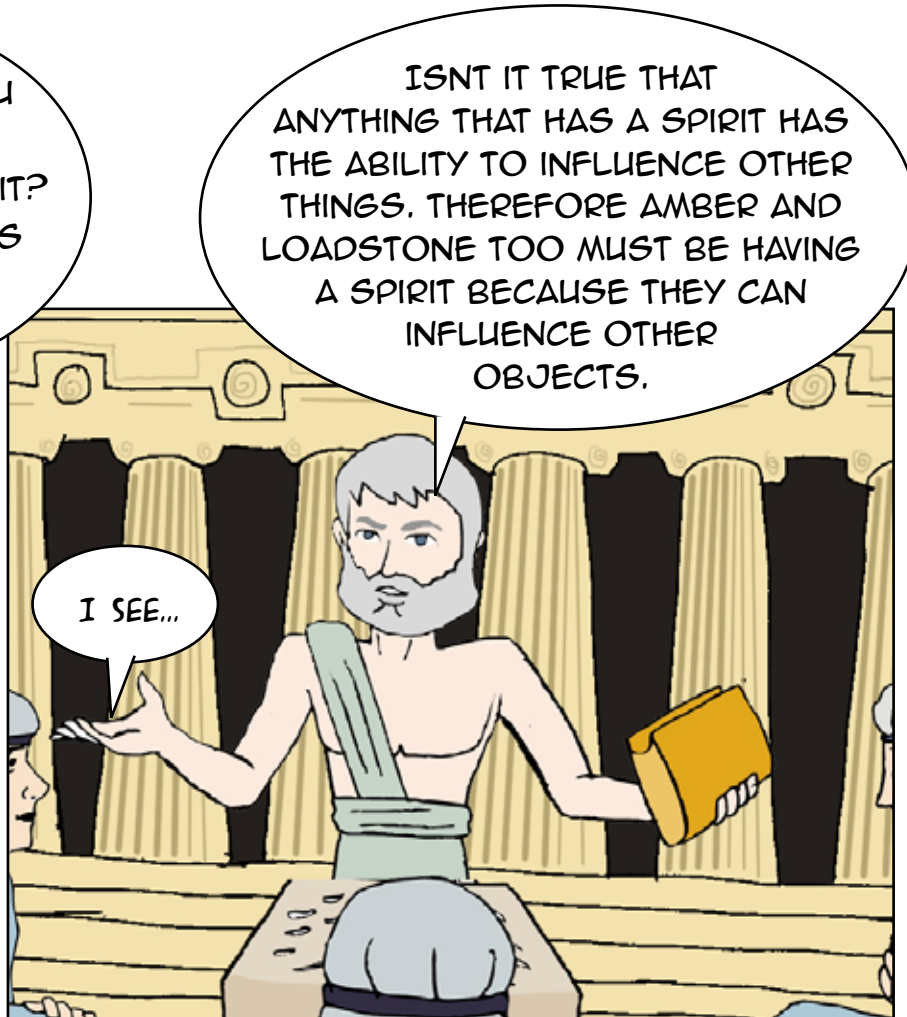
ITS HAPPENING AGAIN
SIMPLY BY RUBBING
WITH HAND!



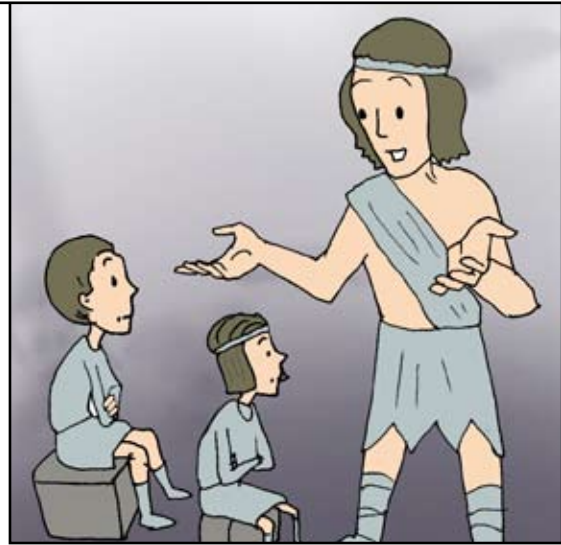
THALES COULD NOT WAIT TO SHARE THIS OBSERVATION WITH HIS STUDENTS.



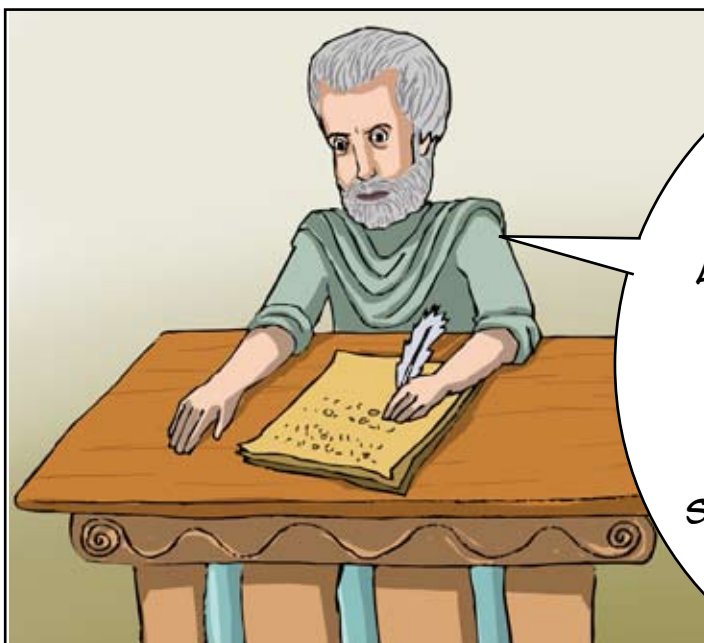
IT IS BELIEVED THAT CHINESE KNEW ABOUT THE LOADSTONE EVEN BEFORE THE GREEKS.



THE NEWS OF ATTRACTING PROPERTIES OF AMBER AND LOADSTONE SPREAD TO ALL OF GREECE FROM ONE GENERATION TO ANOTHER THROUGH WORD OF MOUTH.



300 YEARS LATER THIS INFORMATION ABOUT THE STONES REACHED THEOPHRASTUS, WHO WAS THE SUCCESSOR OF ARISTOTLE. HE WROTE A BOOK "ON STONES" TO DESCRIBE THIS PHENOMENON.



...AND THIS CHAPTER I WRITE FOR THE BENEFIT OF FUTURE GENERATIONS, ABOUT THE GREAT PHILOSOPHER THALES WHO GAVE US THE KNOWLEDGE OF TWO MAGICAL STONES THAT ARE POSSESSED WITH A LIVING SPIRIT. THE TWO STONES THAT WE NOW CALL AS AMBER AND LOADSTONE



THE NEXT BOOK MICHAEL PICKED UP HAD THE TITLE "DE-MAGNETE"

FOR ALMOST 2000 YEARS THERE WAS NO FURTHER DISCOVERY ON THIS SUBJECT TILL A PHYSICIAN BY THE NAME OF WILLIAM GILBERT WHO LIVED IN 16TH CENTURY ENGLAND GOT INTERESTED IN IT.



ONE DAY WHEN GILBERT WAS BUSY MAKING SOME MEDICINES...



HEY GILBERT!
LOOK! I JUST FOUND
AN OLD BOOK WRITTEN
1500 YEARS AGO BY
GREEK PHILOSOPHER
THEOPHRATUS.

THATS A
VERY OLD
BOOK.
LETS HAVE A
LOOK
AT IT.



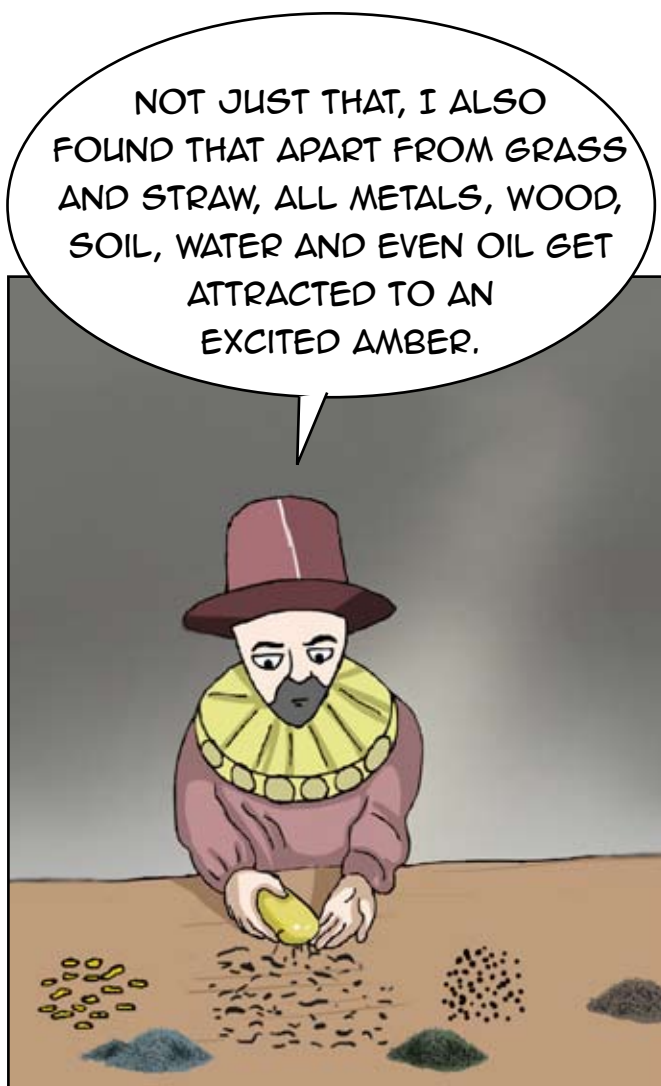
STONES
WITH POWER OF
ATTRACTION? LET ME
TRY THESE
EXPERIMENTS
WITH OTHER
SUBSTANCES.

HELLO GILBERT
DID YOU FIND
ANYTHING OF
INTEREST IN THE
BOOK I GAVE YOU
YESTERDAY

YES INDEED.
IN FACT I DID
SOMETHING
MORE THAN WHAT
WAS GIVEN IN
THE BOOK

FEW WEEKS
LATER





YOU HAVE FOUND
SO MUCH!



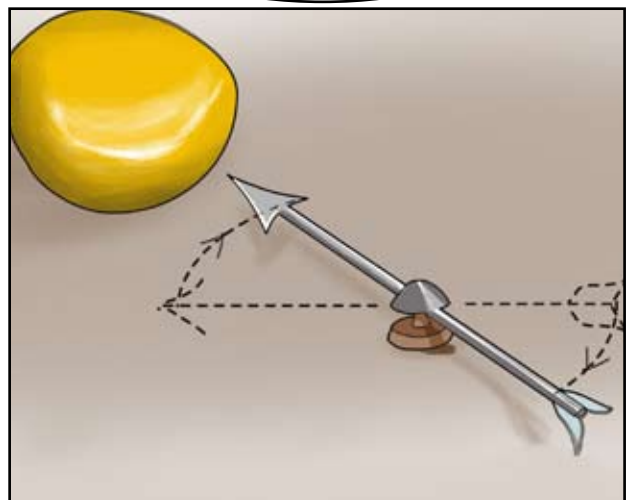
THATS NOT ALL,
I HAVE ALSO DEVELOPED
AN INDICATOR TO SHOW
WHICH SUBSTANCE IS
ELECTRIC AND
WHICH IS NOT.



I CALL THIS
A VERSORIUM. ITS
MADE OF A METAL
NEEDLE PLACED ON A
WOODEN STAND



IF I PLACE
AN ELECTRIC
SUBSTANCE NEAR THE
VERSORIUM AFTER RUBBING,
THE NEEDLE TURNS TOWARDS
THE ELECTRIC
SUBSTANCE



GILBERT WAS INVITED TO GIVE LECTURES ON ELECTRICS



THE GREEKS WERE NOT ENTIRELY CORRECT IN THEIR BELIEF THAT SOME STONES HAD SPIRIT.

I HAVE COME TO THE CONCLUSION THAT MANY SUBSTANCES APART FROM AMBER CAN ACQUIRE POWER OF ATTRACTION ON BEING RUBBED.

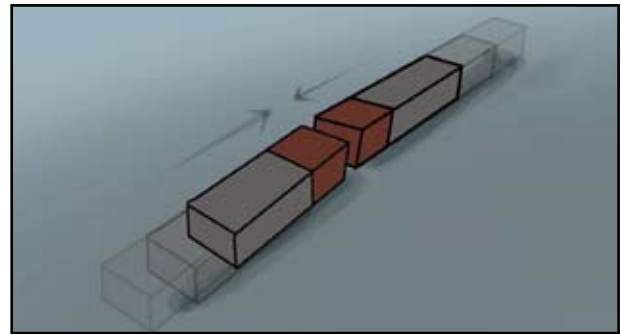
THIS ATTRACTION SEEMS TO BE A NATURAL PROPERTY OF MATTER PRESENT IN MANY SUBSTANCES IN DIFFERENT QUANTITY

SIR, IT LOOKS LIKE ELECTRICITY IS THE SAME AS MAGNETISM.

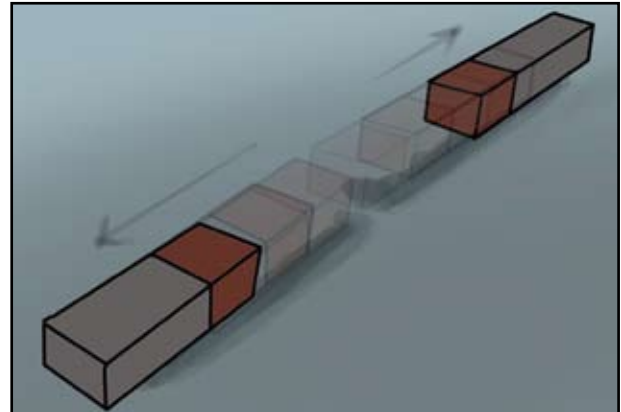
THAT IS INCORRECT. IN ELECTRICITY THERE IS ONLY ATTRACTION WHILE IN MAGNETS THERE IS BOTH ATTRACTION AND REPULSION



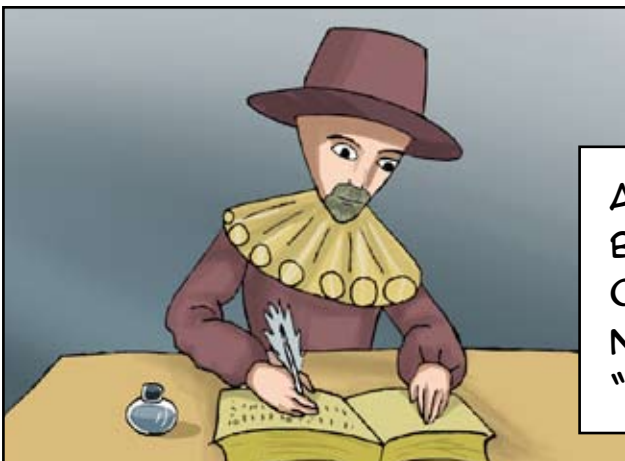
ACCORDING TO GILBERT
ELECTRICS ONLY DISPLAY
ATTRACTION PROPERTY.



WHILE MAGNETS DISPLAY
BOTH ATTRACTION...



...AND REPULSION



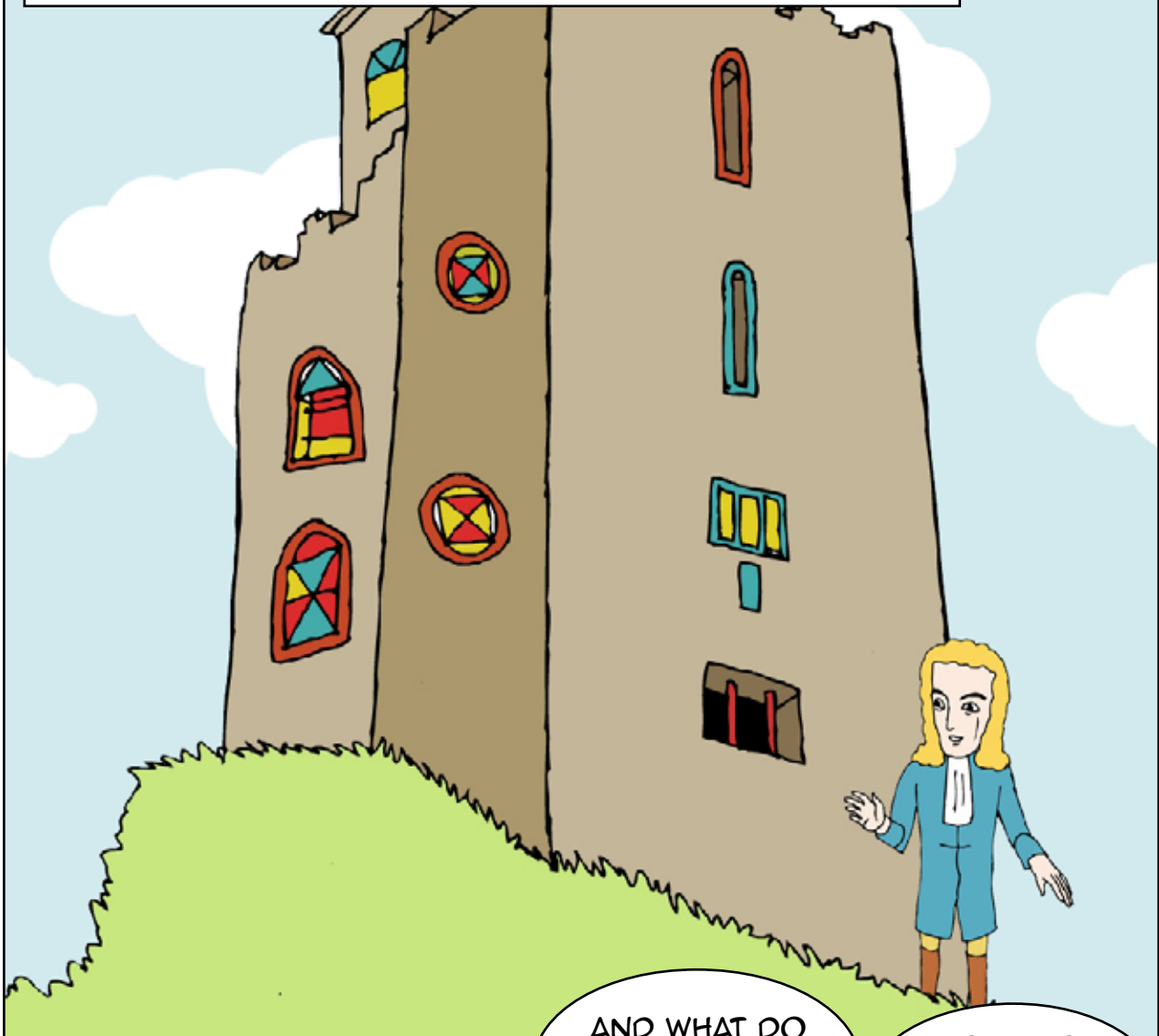
AND THEN GILBERT WROTE A
BOOK ABOUT HIS DISCOVERIES
ON ELECTRICITY AND MAGNETISM.
NAME OF THIS BOOK WAS
"DE-MAGNETE"

MICHAEL FINISHED READING GILBERTS'
BOOK AND KEPT IT SAFELY.



THE THIRST TO KNOW
MORE LEAD MICHAEL TO
READ ANOTHER BOOK. IT
WAS ABOUT ROBERT BOYLE
AND HIS DISCOVERIES.

ROBERT BOYLE LIVED IN IRELAND IN MID 17TH CENTURY.



ONE DAY ROBERT BOYLE GOT A GIFT FROM A FRIEND

AND WHAT DO YOU HAVE FOR ME POSTMAN?

SIR, ITS A BOOK SENT BY YOUR FRIEND

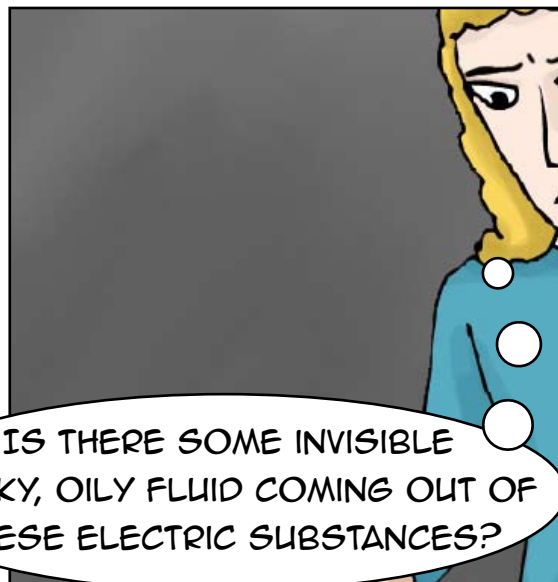




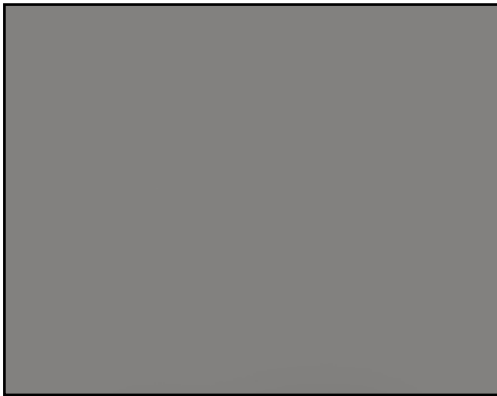
IN THOSE DAYS, PHILOSOPHERS DID NOT JUST READ BOOKS BUT REPEATED THE EXPERIMENTS THAT WERE DESCRIBED IN THOSE BOOKS AND BELIEVED IN THEM ONLY IF THEY GOT SIMILAR RESULTS. ROBERT BOYLE WAS ONE OF SUCH PHILOSOPHERS.



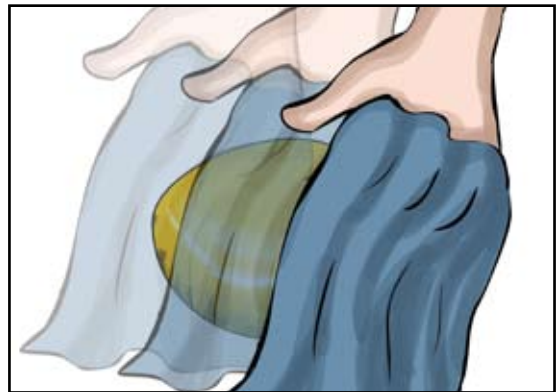
I HAVE SEEN THAT A CONTAINER WHICH HAS OIL IN IT ATTRACTS MAXIMUM DUST COMPARED TO OTHER CONTAINERS.



MAY BE YES.



WHEN AN ELECTRIC SUBSTANCE
IS RUBBED



A STICKY INVISIBLE
LIQUID COMES OUT
OF IT



IT STICKS TO ANYTHING
THAT COMES IN ITS
WAY



AND PULLS
IT BACK



YOUR EXPLANATION
OF THE PHENOMENON
IS STRANGE BUT
SINCE THIS IS THE ONLY
EXPLANATION AVAILABLE,
I THINK THE SCIENTIFIC
COMMUNITY WILL
ACCEPT IT.



THANKS



AND IN THIS WAY AROUND 2000 YEARS AFTER THE DISCOVERY
OF ELECTRIC EFFECT THE FIRST THEORY OF ELECTRICITY WAS
INTRODUCED BY ROBERT BOYLE.

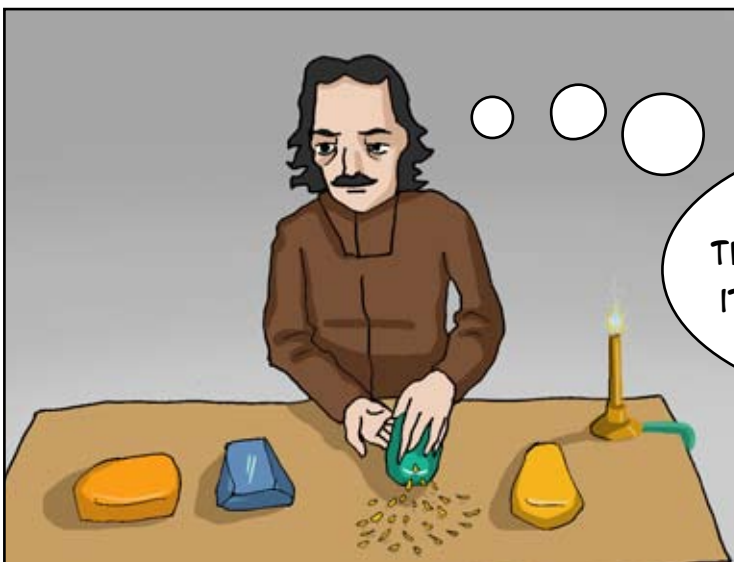
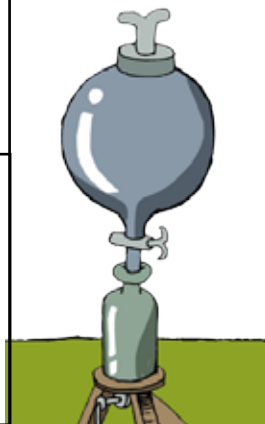


INVISIBLE STICKY LIQUID? THIS IS GETTING MORE MYSTERIOUS THAN I THOUGHT

MICHAEL'S NEXT BOOK WAS ABOUT OTTO VON GUIRICK AND OTHER PHILOSOPHERS...

OTTO VON GUIRICK LIVED IN 17TH CENTURY GERMANY. HE WAS ALSO A POLITICIAN APART FROM BEING A SCIENTIST. HE IS FAMOUS FOR HAVING INVENTED THE VACUUM PUMP.

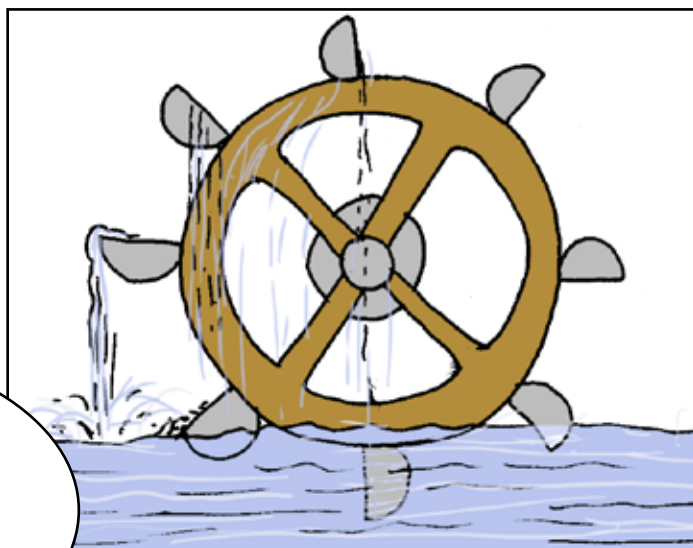
HE WAS FOND OF DOING ELECTRICAL EXPERIMENTS WHENEVER HE GOT TIME AWAY FROM POLITICS



STRANGE, WHEN I RUB THE AMBER AFTER HEATING IT, THE ATTRACTIVE POWER INCREASES.



THERE MUST BE OTHER
WAYS OF INCREASING
THE POWER OF ATTRACTION
OF ELECTRICS,
BUT WHICH?

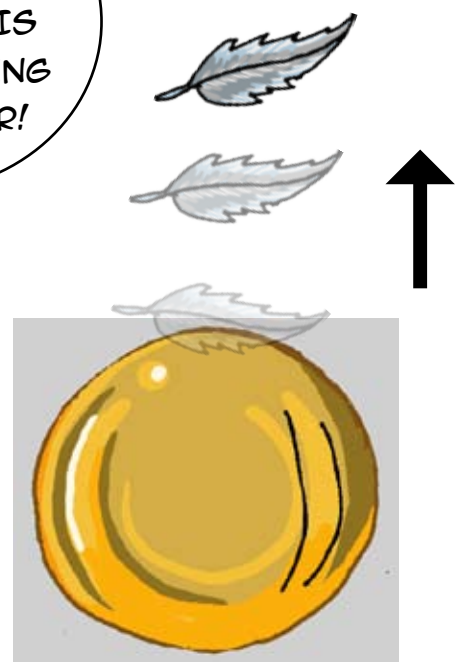
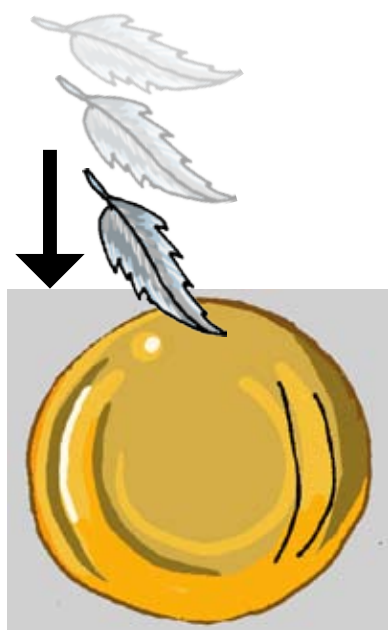
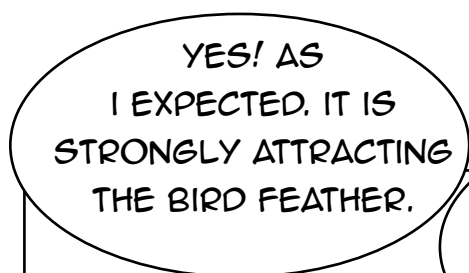
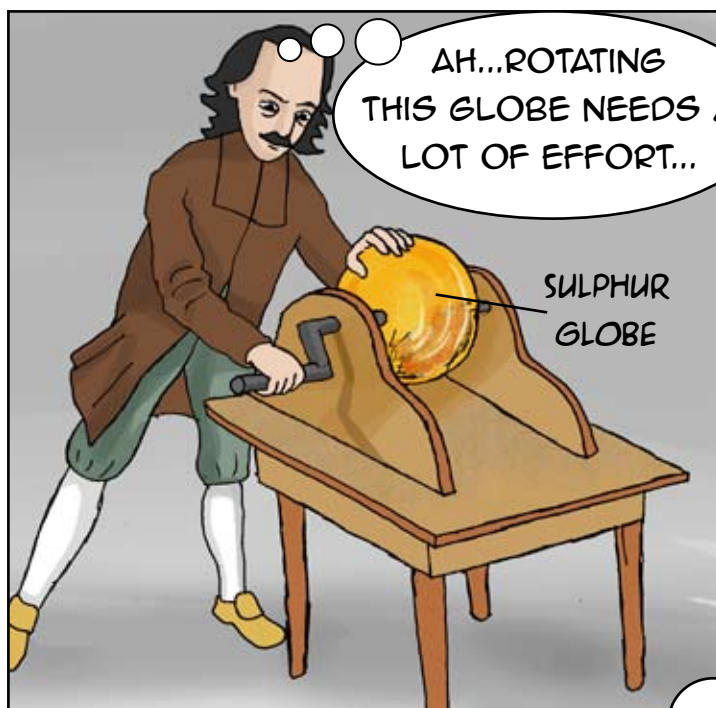


IF I AM ABLE TO
CONTINUOUSLY
RUB AN ELECTRIC,
THEN I CAN GET LOT
OF ELECTRIC POWER

WITH SOMETHING
LIKE A ROTATING WHEEL,
IT MAY BE POSSIBLE.



BY ROTATING THIS
GLOBE OF SULPHUR,
I CAN RUB IT FOR A
LONGER TIME AND IT WILL
PRODUCE MORE ELECTRIC
POWER. LET ME TRY IT AND
SEE IF MY GUESS
IS RIGHT...



LET ME TRY
WITH A THREAD
INSTEAD OF
A FEATHER.

FIRST THE
THREAD IS
ATTRACTED TO
THE GLOBE.



IF I BRING THE
THREAD NEAR AGAIN, IT
IS GETTING REPELLED!
JUST LIKE THE
FEATHER!

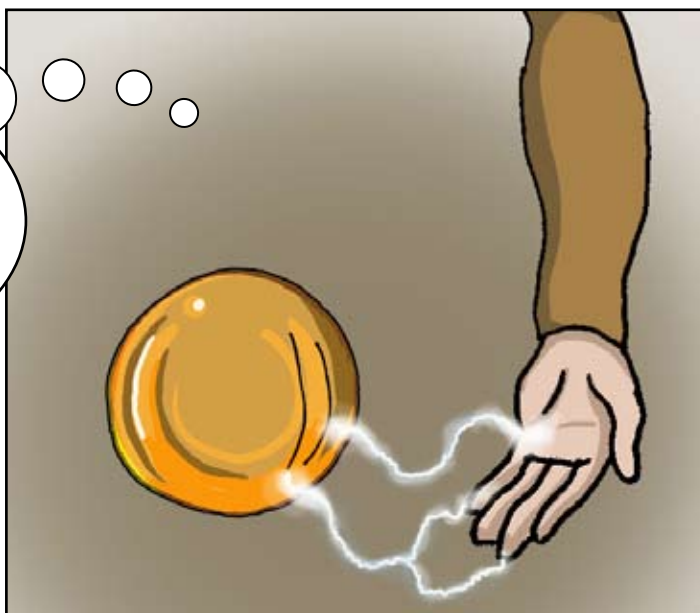


WILLIAM GILBERT
WAS MISTAKEN WHEN HE
SAID THAT THERE IS NO
REPULSION IN ELECTRICS.
MY EXPERIMENTS CLEARLY
SHOW THAT ELECTRIC
SUBSTANCES ALSO HAVE
PROPERTY OF REPULSION
ALONG WITH
ATTRACTION.

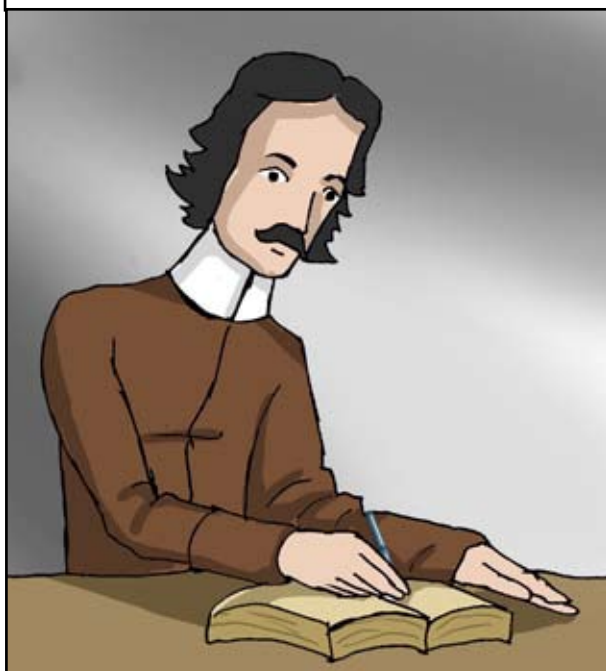


LET ME SEE WHAT
HAPPENS IF I RUB IT
MORE AND MORE...

GOOD LORD!
LIGHT RAYS ARE
EMERGING FROM THE
GLOBE WHEN I BRING
MY HAND NEAR IT!!



AND THEN OTTO VON GUERICKE CAREFULLY
DOCUMENTED HIS OBSERVATIONS WITH
THE SULPHUR GLOBE...



I WRITE THIS FOR THE BENEFIT OF
FELLOW SCIENTISTS.

1. A GREAT AMOUNT OF ELECTRIC
POWER IS GENERATED IF WE RUB
A ROTATING GLOBE MADE OF
SULPHUR.
2. ELECTRICS ALSO HAVE THE
POWER OF REPULSION ALONG WITH
ATTRACTION.
3. A MYSTERIOUS LIGHT EMERGES
FROM THE GLOBE IF IT IS RUBBED
FOR A LONG TIME AND THEN TOUCHED
BY HAND...

OTTO VON'S ELECTRIC GENERATOR BECAME VERY POPULAR AND MANY PEOPLE GOT INTERESTED IN DOING ELECTRICAL EXPERIMENTS WITH THIS MACHINE

ONE OF THEM WAS NEWTON'S LAB ASSISTANT. HIS NAME WAS HALKSBEE. HE LIVED IN ENGLAND IN 18TH CENTURY.

ONE DAY NEWTON WAS CONDUCTING SOME ELECTRICAL EXPERIMENTS IN HIS LAB...



GLASS IS ALSO AN INTERESTING MATERIAL TO DO ELECTRICAL EXPERIMENTS. LOOK HOW IT ATTRACTS PIECES ON BOTH SIDES

SIR, SHOULD WE TRY MAKING AN ELECTRIC MACHINE WITH A GLASS GLOBE INSTEAD OF SULPHUR



WHY DONT YOU TRY
IT OUT. YOU CAN USE
MY LAB AS YOU WANT.



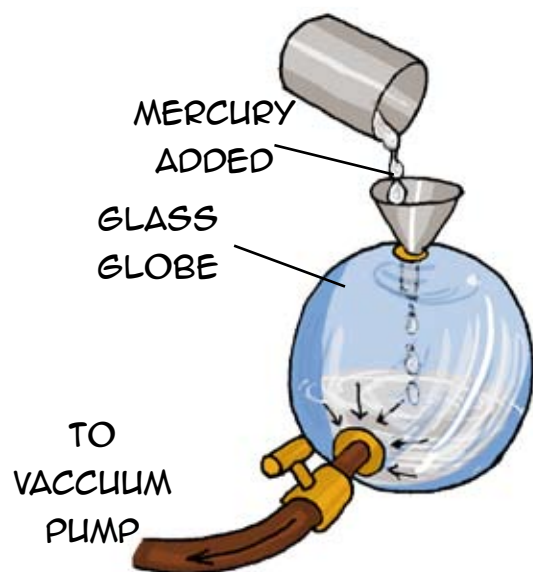
THANK YOU FOR
THE SUPPORT SIR.



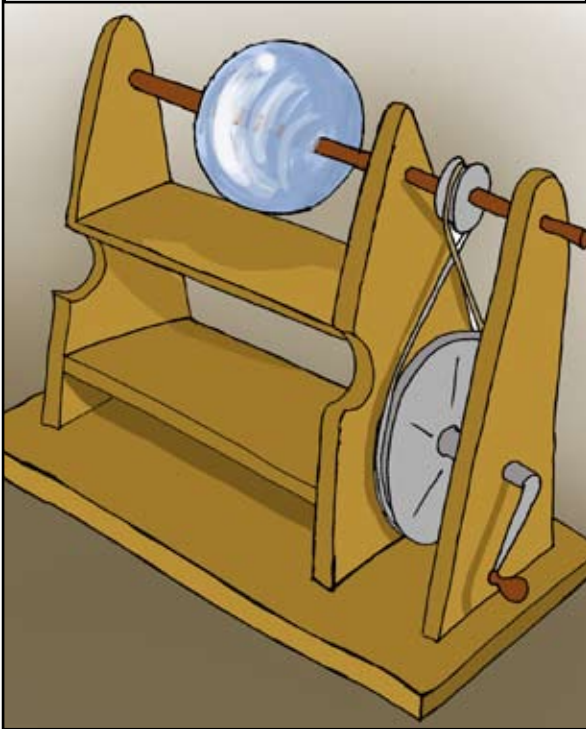
AND SO HAUKSBEE GOT DOWN
TO MAKING HIS OWN ELECTRIC
MACHINE. BUT HE MADE
A SMALL MODIFICATION IN
OTTO VAN GUIRICK'S DESIGN.



HE MADE A GLASS GLOBE
INSTEAD OF SULPHUR AND
FILLED IT WITH LITTLE
MERCURY AFTER EVACUATING
SOME AIR FROM IT.



HAUKSBEE CALLED THIS
"THE INFLUENCE MACHINE"



LET'S SEE WHAT
HAPPENS IF I RUB THIS
ROTATING GLASS GLOBE...



IS THE GLASS GLOWING
AS I TOUCH IT WITH MY HAND?
OR IS IT A DECEPTION OF
MY EYES



LET ME SWITCH OFF
THE LIGHT AND SEE





THI...THIS IS
UNBELIEVABLE!!

THE REASON FOR THIS LIGHT EMERGENCE WAS NOT KNOWN TILL THE DISCOVERY OF ELECTRON IN LATE 19TH CENTURY, BUT HAUKSBEE IS REMEMBERED FOR MAKING THE ELECTRIC MACHINE USING GLASS GLOBE.

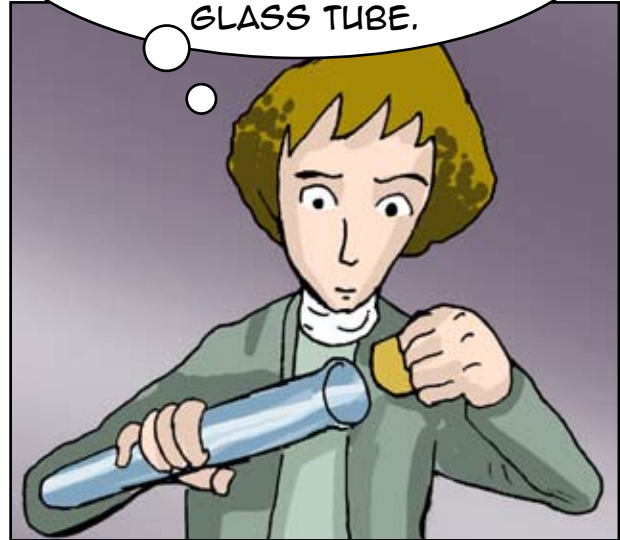
NOW MANY MORE PEOPLE FROM DIFFERENT WALKS OF LIFE GOT INTERESTED IN ELECTRICAL EXPERIMENTS. ONE OF THEM WAS COLOURIST STEPHEN GRAY, WHO LIVED IN MID 18TH CENTURY ENGLAND.



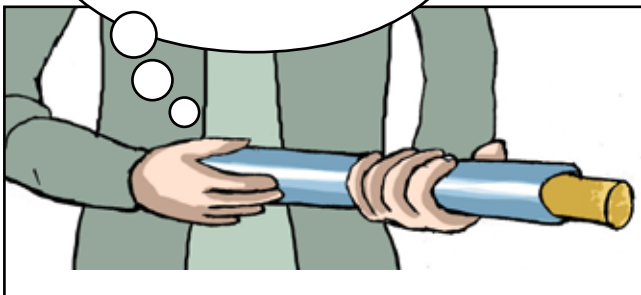
LET'S SEE WHAT THIS BOOK IS ABOUT. THAT LOOKS INTERESTING



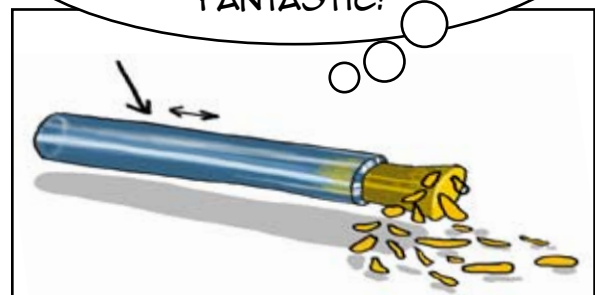
LET ME TRY SOME OF THESE EXPERIMENTS MYSELF. LET'S SEE WHAT HAPPENS IF I FIT A CORK ON THIS GLASS TUBE.



IF I RUB THIS TUBE AT ONE END...



AHA... GOLD FOIL GETTING ATTRACTED TO THE GLASS ROD, FANTASTIC!



WAIT A MINUTE, BUT WHY IS THE GOLD FOIL GETTING ATTRACTED TO THE CORK? I DID NOT RUB THE CORK. I ONLY RUBBED THE GLASS TUBE. DOES THAT MEAN THAT ELECTRIC FLUID TRAVELED TO THE CORK? CAN ELECTRIC FLUID TRAVEL? I MUST CHECK BY EXPERIMENT.



LET ME TRY ATTACHING
A ROPE TO THE GLASS ROD.
NOW I ATTACH AN IVORY
BALL TO THE ROPE

NOW IF I RUB THE
TUBE, WILL THE GOLD
FOIL GET ATTRACTED TO
THE IVORY BALL?

NO, NOTHING
HAPPENED.



I REMEMBER.
THE GLASS ROD
THAT I USED
EARLIER WAS A
LITTLE WET. LET
ME USE A WET
ROPE AND
SEE.



GREAT!
ITS ATTRACTING
NOW.

HOW FAR CAN
THIS ELECTRIC
FLUID BE SENT?

I'LL TRY IT FROM
THE BALCONY OF MY HOUSE

SIR, IT IS ATTRACTING!



LET'S NOW
PLACE IT HORIZONTALLY
ON GROUND AND SEE HOW
FAR IT GOES,

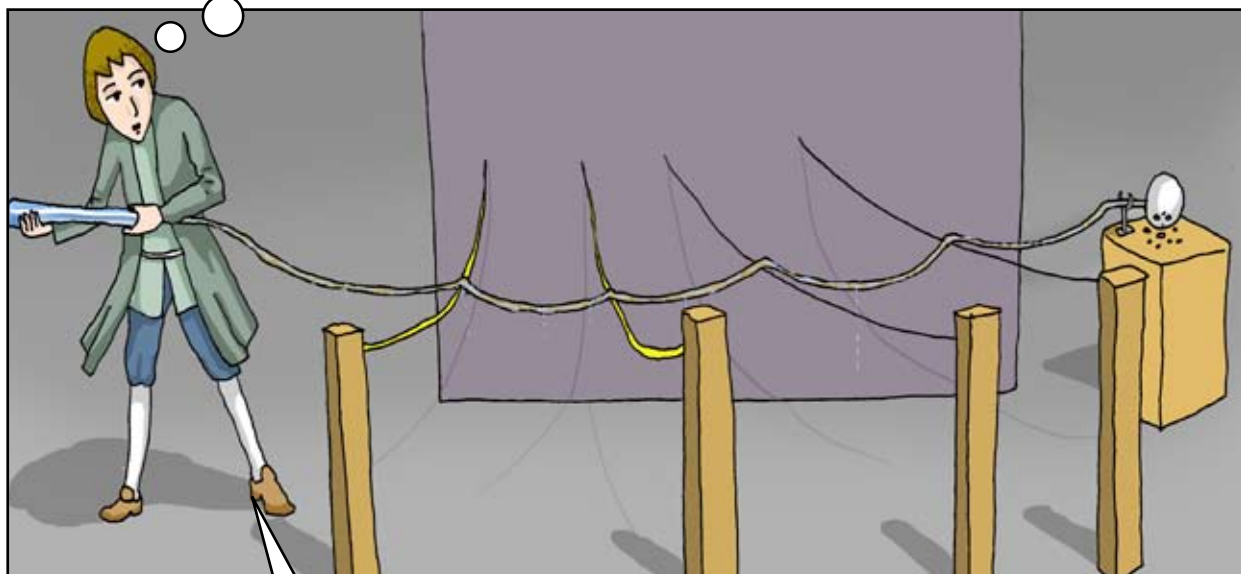
STRANGE!
IT'S NOT ATTRACTING
ANYTHING AT ALL.



MAYBE, THE ELECTRIC FLUID IS PASSING TO THE GROUND THROUGH THE METAL NAILS. HOW CAN I PREVENT THE ROPE FROM TOUCHING THE GROUND?



LET'S SEE IF THIS ARRANGEMENT WORKS. BY PLACING THE ROPE ON SILK LINES.



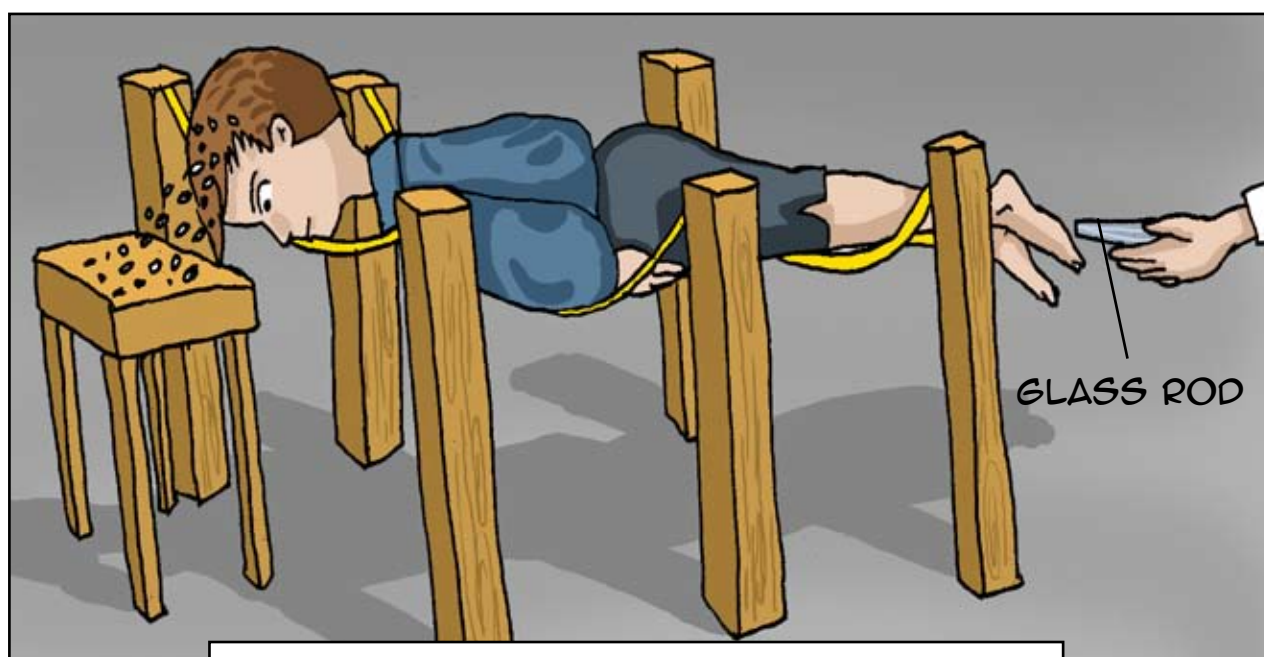
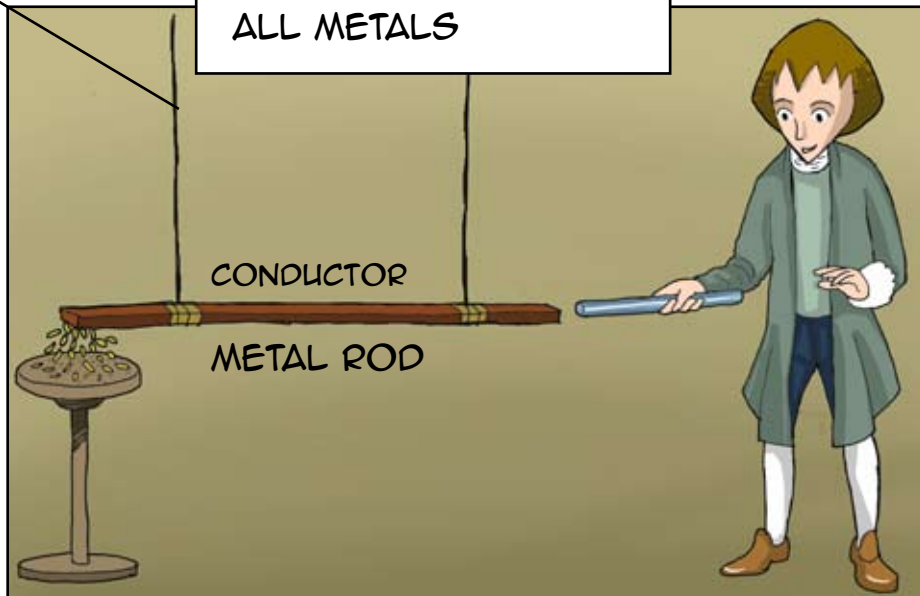
IT WORKS! ELECTRIC FLUID DOES NOT PASS THROUGH SILK. IT IS PASSING ONLY THROUGH THE WET ROPE! THAT MEANS ELECTRIC FLUID TRAVELS THROUGH SOME SUBSTANCES AND DOES NOT TRAVEL THROUGH OTHERS

INSULATOR

IT TRAVELS THROUGH
ALL METALS

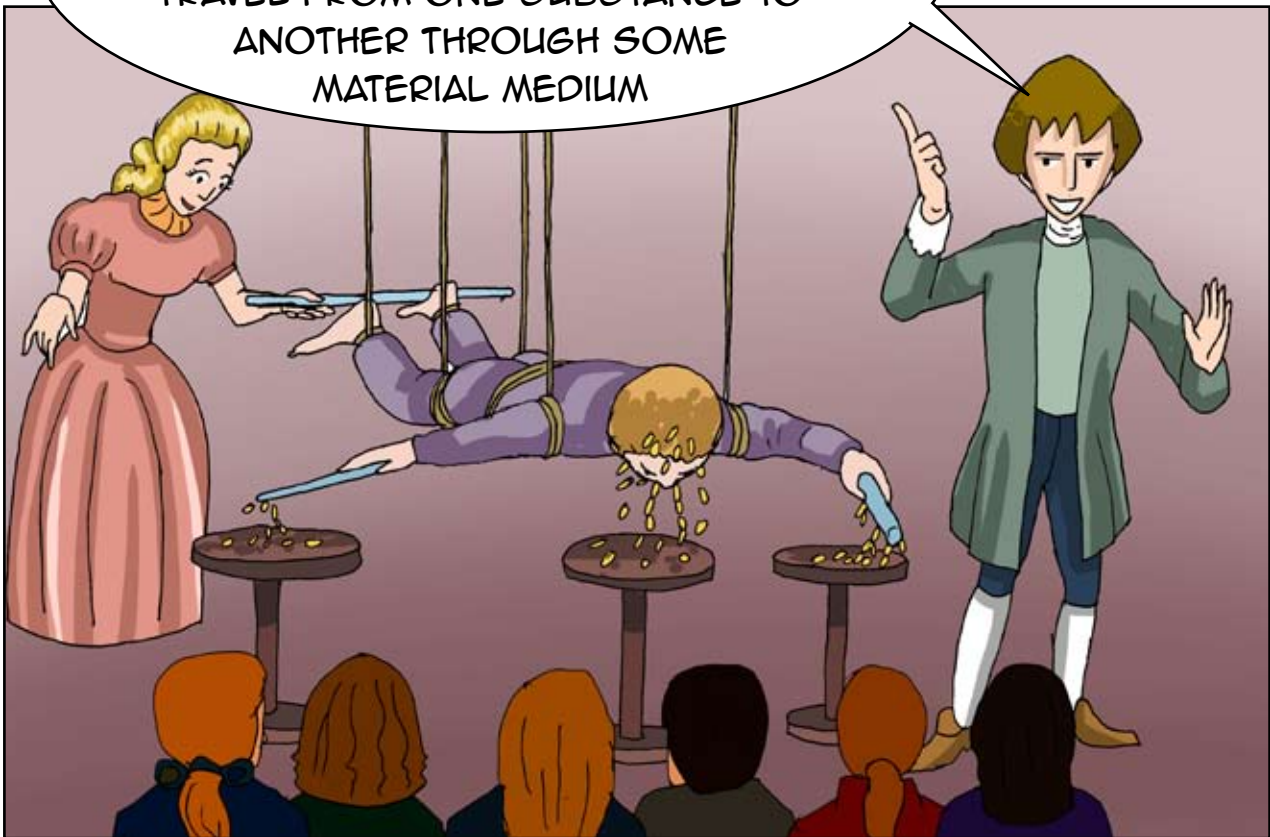
CONDUCTOR

METAL ROD

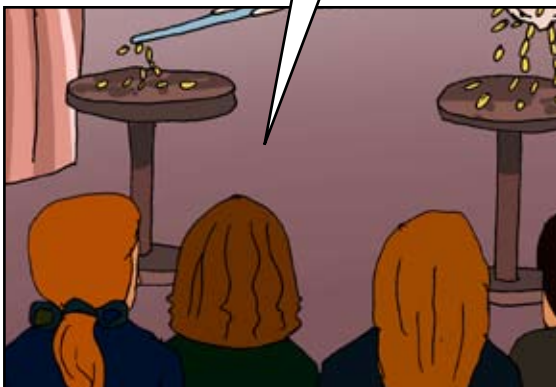


AND HUMAN BODY AS WELL!

LADIES AND GENTLEMEN, I HAVE
COME TO KNOW THIS THROUGH
EXPERIMENTS THAT ELECTRIC FLUID CAN
TRAVEL FROM ONE SUBSTANCE TO
ANOTHER THROUGH SOME
MATERIAL MEDIUM



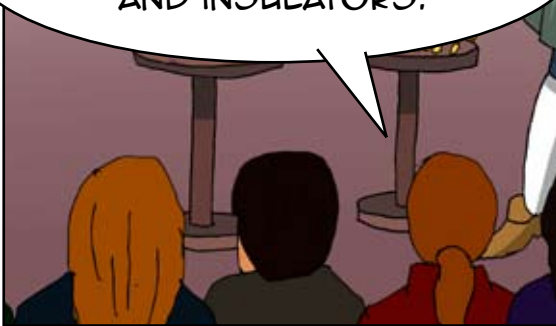
SIR, CAN THE ELECTRIC
FLUID TRAVEL THROUGH
ANYTHING?



NEGATIVE. IT CAN ONLY
TRAVEL THROUGH CONDUCTORS
AND CANNOT TRAVEL THROUGH
INSULATORS...

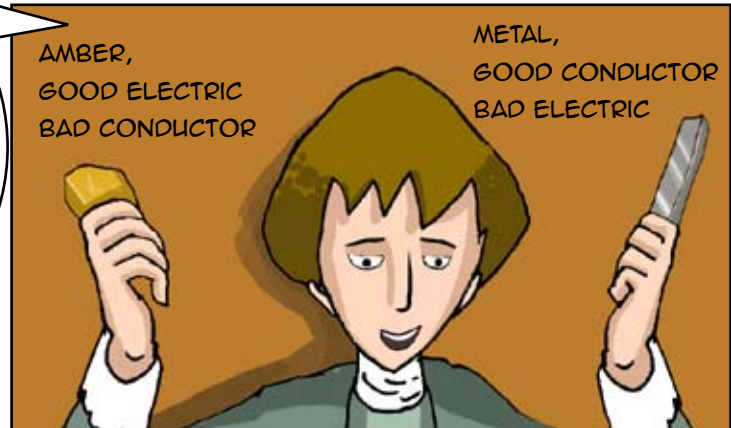


SIR, GIVE US SOME
EXAMPLES OF **CONDUCTORS**
AND INSULATORS.



YOU WILL BE SURPRISED
TO KNOW THAT SUBSTANCES
THAT ARE BAD ELECTRICS
LIKE METALS ARE
GOOD CONDUCTORS

SUBSTANCES THAT
ARE GOOD ELECTRICS, LIKE
AMBER, GLASS AND WAX ARE
BAD AT ALLOWING ELECTRIC
FLUID TO PASS THROUGH
THEM . THEY ARE
BAD CONDUCTORS
OR INSULATORS.

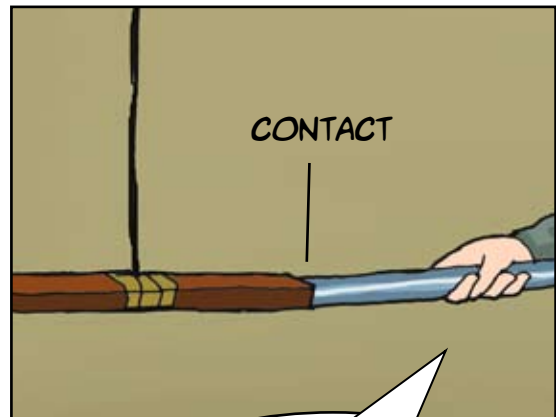


NO CONTACT



I HAVE ALSO
FOUND THAT SUBSTANCES CAN
BECOME ELECTRIC EVEN FROM
A DISTANCE WITHOUT ANY CONTACT.
I CALL THIS WAY OF GIVING
ELECTRIC POWER TO
A SUBSTANCE AS
INDUCTION

CONTACT



AND GIVING ELECTRIC
POWER TO A SUBSTANCE
BY CONTACT I CALL AS
CONDUCTION.



GRAY MADE A NETWORK OF METAL WIRES AND CONNECTED THEM TO ELECTRIC MACHINE. BY RUNNING THE MACHINE GRAY WAS ABLE TO GIVE ELECTRIC POWER TO MANY ELECTRIC SUBSTANCES SIMULTANEOUSLY.



HEY MICHAEL! ITS TIME
TO SHUT THE SHOP. COME,
LETS GO HOME.

I'LL BE
RIGHT THERE.

AT HOME, MICHAEL REMEMBERED ALL THE SCIENTISTS ABOUT
WHOM HE READ THROUGH THE DAY



I WONDER IF THERE ARE
MORE SURPRISES RELATED TO
ELECTRIC SUBSTANCES. WILL HAVE TO
SEARCH FOR ANOTHER BOOK TOMORROW.
TILL THEN GOOD NIGHT THALES
GOOD NIGHT WILLIAM GILBERT
GOOD NIGHT ROBERT BOYLE
GOOD NIGHT OTTO VON GUERICK
GOOD NIGHT HAUKEBEE AND
GOODNIGHT
STEPHEN GREY...

IN VOLUME TWO, READ ABOUT THE LATER ADVANCEMENTS IN
ELECTRICITY BY:

DUFAY

VON KLEIST AND MUSCHENBROOK

BENJAMIN FRANKLIN

CANTON

GALVANI AND

VOLTA

THALES

ACTIVITY: RUBBING AMBER AND BRINGING IT CLOSE TO OTHER OBJECTS

CONCEPT: AMBER, LOADSTONE, ATTRACTION, REPULSION

QUESTIONS: IS ATTRACTION QUALITY OF AMBER AN ACCIDENT OR A NATURAL PHENOMENON

WILLIAM GILBERT

ACTIVITY: RUBBING MANY DIFFERENT THINGS AND OBSERVING THE EFFECT. ATTRACTING DIFFERENT VARIETY OF THINGS AND OBSERVING EFFECT. MAKING A VERSORIUM.

CONCEPT: DEFINING ELECTRICS AND NON-ELECTRICS, VERSORIUM

QUESTIONS: IS THE PHENOMENON DISCOVERED BY THALES ONLY APPLICABLE TO AMBER AND GRASS? WHAT IS THE NAME GIVEN TO THE PHENOMENON?

ROBERT BOYLE

ACTIVITY: RUBBING MANY DIFFERENT THINGS AND OBSERVING THE EFFECT.

CONCEPT: REASON FOR ATTRACTION (THEORY OF ATTRACTION, CAUSE OF ELECTRIC EFFECT)

QUESTION: WHAT IS THE CAUSE OF ATTRACTION POWER OF ELECTRICS?

OTTO VON GUERICK

ACTIVITY: RUBBING SULPHUR GLOBE MOUNTING ON ROTATING MACHINE AND OBSERVING EFFECTS OF GLOBE

CONCEPT: ELECTROSTATIC GENERATOR. ATTRACTION AND REPLICATION OF ELECTRICS

QUESTION: HOW CAN THE ATTRACTION POWER OF ELECTRICS BE INCREASED?

WHY WAS WILLIAM GILBERT WRONG WHEN HE SAID THAT ELECTRICITY AND MAGNETISM ARE TWO ENTIRELY DIFFERENT PHENOMENON WITH NO RELATION BETWEEN THEM.

HAUKSBEE

ACTIVITY: MAKING ELECTRIC MACHINE WITH GLASS GLOBE

CONCEPT: LIGHT EFFECT OF GLASS GLOBE

QUESTION: IF THERE ANY OTHER EFFECT ASSOCIATED WITH ELECTRICS OTHER THAN ATTRACTION AND REPULSION

STEPHAN GREY

ACTIVITY: SENDING ELECTRIC FLUID THROUGH HEMPS

CONCEPT: CONDUCTOR, INSULATOR, CONDUCTION AND INDUCTION

QUESTION: CAN ELECTRIC FLUID TRAVEL THROUGH LONG DISTANCES

WHAT KIND OF MATERIAL MEDIUM IS REQUIRED FOR ELECTRIC FLUID TO TRAVEL